R&D Program: TOWNS

US Army Corps of Engineers®

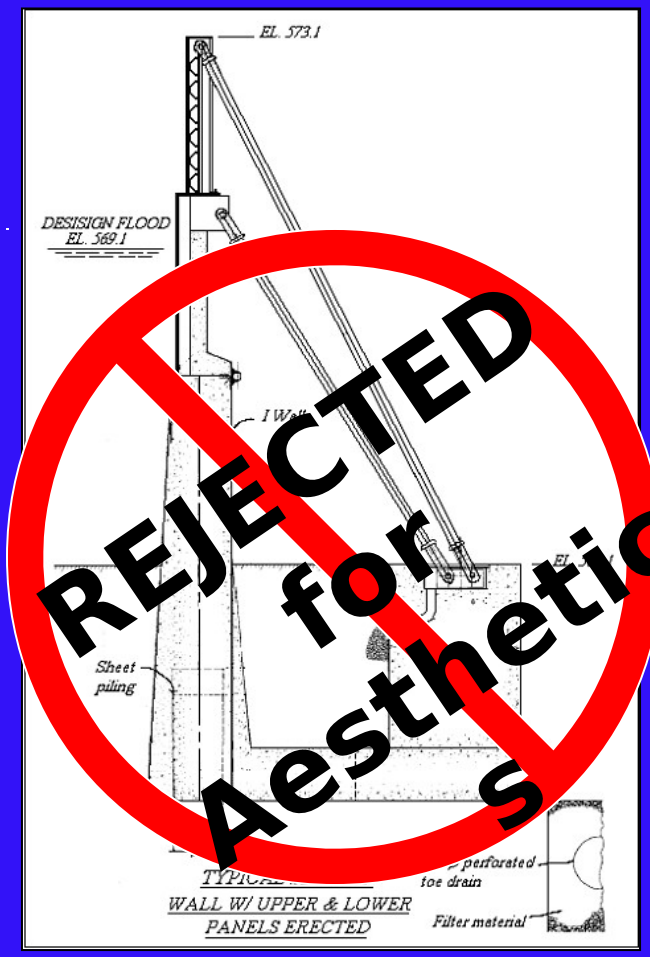
Work Unit: Innovative, Rapidly Deployed / Removable / Reusable Flood Protection System for Urban Environments

Needs & Problems Addressed:

- Costly to construct permanent structures
- Land near riverfronts typically expensive and highly developed for commercial use
- Aesthetic considerations

Objectives:

- Develop an innovative, rapidly deployed, removable, and reusable flood protection system for urban environments
- Make the structural components lightweight and modular so system can be assembled on-site with manual labor



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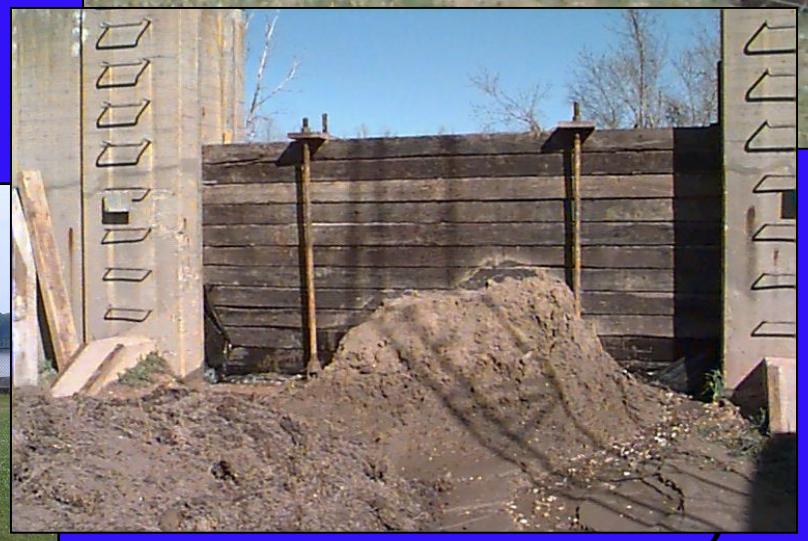
Work Unit Funding Profile:

FY03	FY04	FY05	FY06	Total
$ 78k	$ 200k	$200k	$0k	$478k

Obstructed View

Pristine View



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Business Program/Missions Areas Supported:

- Inland Navigation __ %
- Coastal Navigation __ %
- Coastal Storm Damage Reduction 30 %
- Inland Flood Control/Damage Reduction 70 %
- Environmental Protection & Quality %
- Multi-Purpose (Hydropower, Rec & Water Supply) __ %
- Emergency Management __ %
- Regulatory __ %
- Support for Others __ %

(Must to add to 100%) Total: 100 %

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CW Strategic Goals Check List: (check if applies)

- Provide sustainable water resources development & mgmt _X_
- Restore past environment degradation ___
- Provide project services of high quality _X_
- Reduce losses from natural & manmade hazards _X_
- Supports being a world class technical leader _X_
- Addresses strategic or system needs in a framework or integrated approach by developing:
  - Methods or decision support tools ___
  - Technology to improve life cycle productivity _X_
  - Technology to monitor systems, provide feedback and develop operating guidance ___

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Which “short term” field needs does this support:

- Improves efficiencies in planning, design, and operation of flood damage reduction structures
- Enhances environmental, social, and economic sustainability of Corps FDR projects
- Reduces life-cycle costs by providing temporary structural flood control

Field Review Group Relative Ranking:

- FRG planned for 21-22 August 2002

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Listening Sessions Check List: (check if applies)

- Improves data sharing/exchange with the public in these areas:
  - Provides one stop shop for maps & data for basin wide planning ___
  - Provides data to make informed decisions ___
  - Provides a system for basin wide planning _X_
  - Provides information about what is happening at Corps facilities (up to date web sites) ___
- Tech Transfer plan to include educating the public _X_
  Coordinate research, models, analysis with regulatory agencies to insure results will be accepted _X_
- Develop R&D products:
  - For watershed management plans, not just at the project level _X_
  - To include aesthetics as components of all projects _X_
- Create better models for ground & surface water ___

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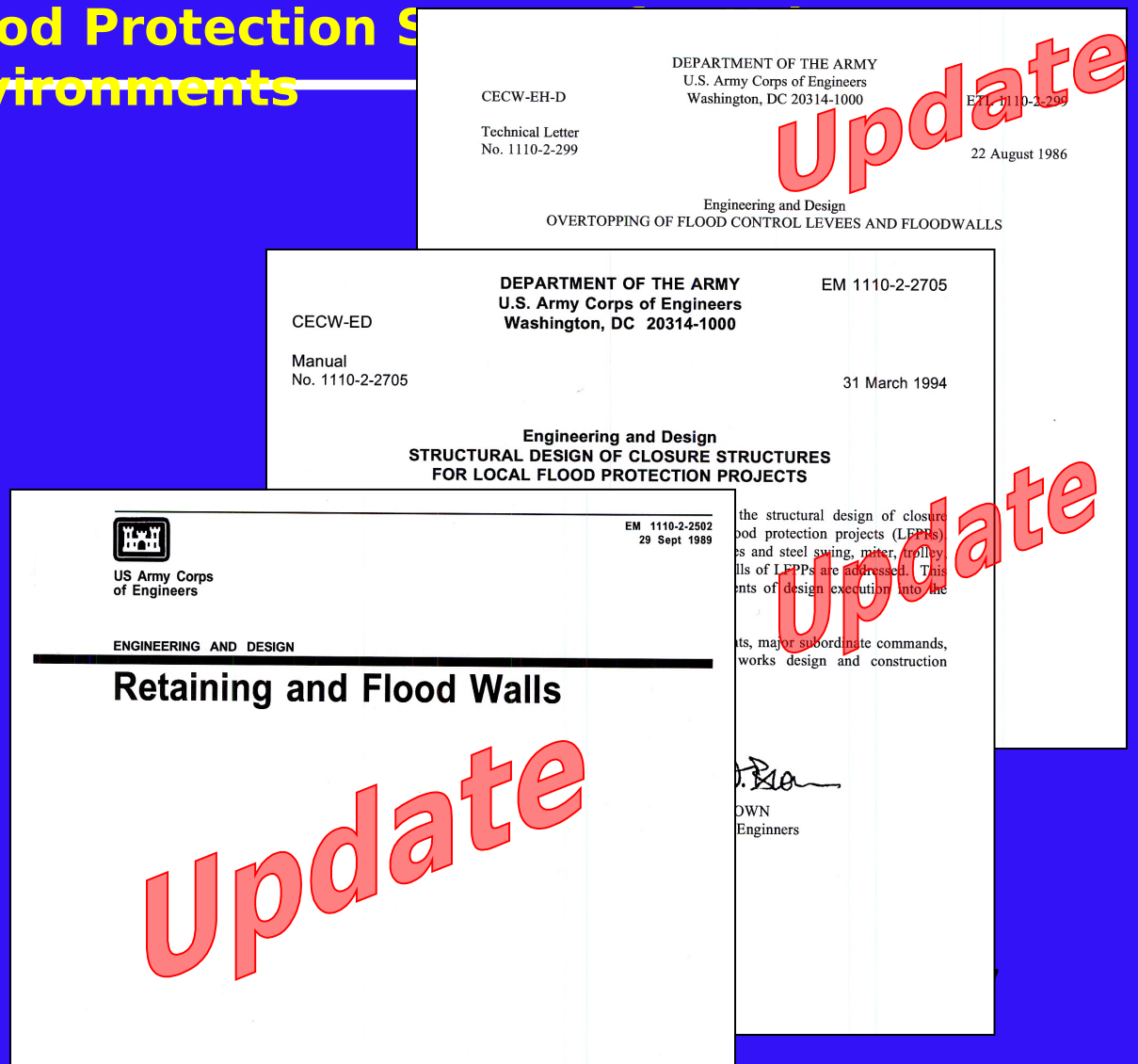
Products:

- Design and specifications for rapidly deployable flood protection system for urban environments
- Article in TOWNS bulletin on unique features
- Engineer Technical Letter
- Engineer Manual Updates



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Benefits

- Direct:
  - Significant cost savings in not constructing permanent structures
  - System is rapidly deployable, removable, and reusable
  - Significant ROI potential
- Indirect:
  - Reduced property and life losses
  - Increased aesthetics
  - Potentially reduced environmental impacts
  - Reduced need for relocating businesses and homes from flood prone areas

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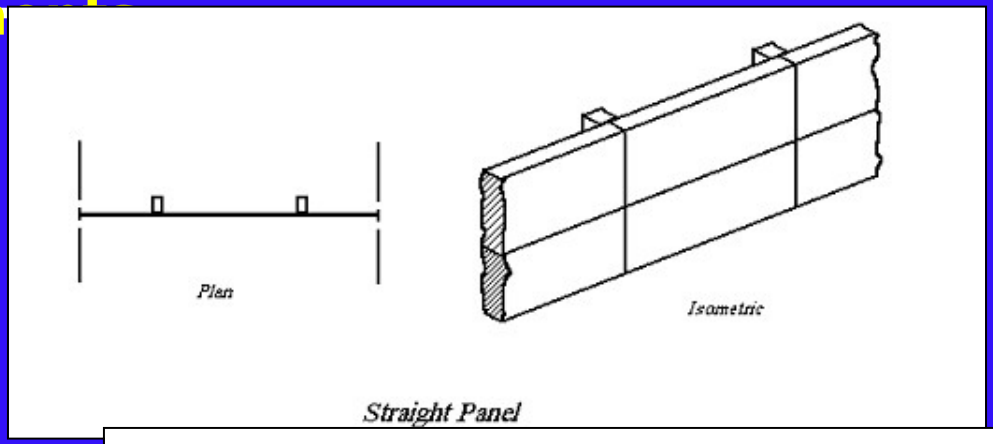
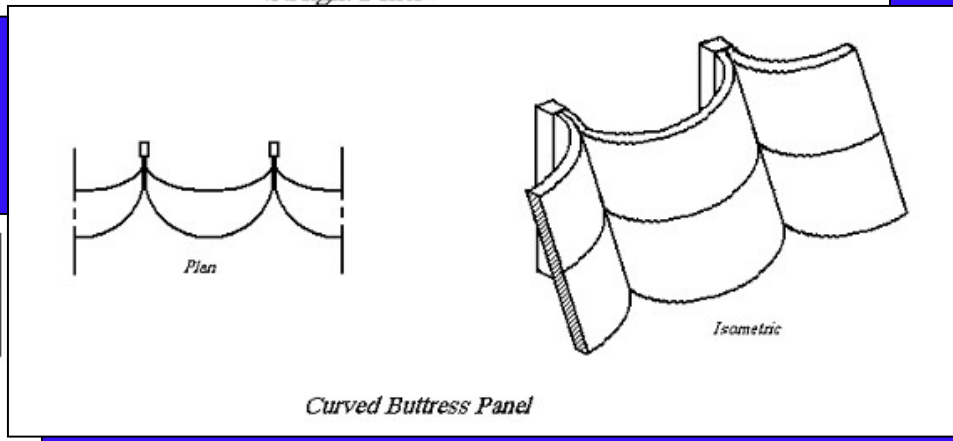
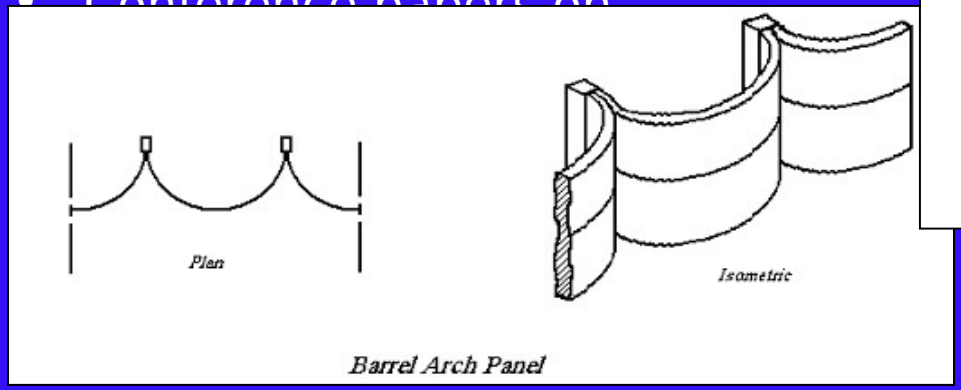
Technology Transfer Plan:

- Research published in ERDC technical reports and posted on TOWNS website
- Presentation at Computer-Aided Structural Engineering (CASE) task group
- Conference papers on







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Why should the Corps fund this R&D, instead of private industry and/or others:

- Innovative flood protection systems are largely used by government agencies, thus there is little incentive for industry to develop reusable systems

What is Impact if not started:

- FDR projects may not be authorized due to social, economic, and environmental problems with traditional flood walls